

General Disclaimer

One or more of the Following Statements may affect this Document

- This document has been reproduced from the best copy furnished by the organizational source. It is being released in the interest of making available as much information as possible.
- This document may contain data, which exceeds the sheet parameters. It was furnished in this condition by the organizational source and is the best copy available.
- This document may contain tone-on-tone or color graphs, charts and/or pictures, which have been reproduced in black and white.
- This document is paginated as submitted by the original source.
- Portions of this document are not fully legible due to the historical nature of some of the material. However, it is the best reproduction available from the original submission.



Technical Memorandum 83872

(NASA-TM-83872) REPORTS ON CRUSTAL
MOVEMENTS AND DEFORMATIONS (NASA) 141 p
HC A07/MF A01 CSCL 08G

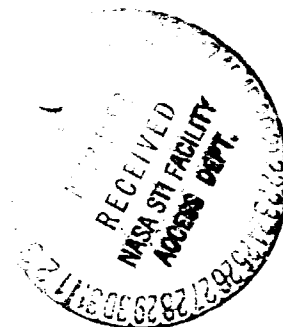
N82-18786

Unclas
G3/46 13868

Reports on Crustal Movements and Deformations

S. C. Cohen and T. Peck

DECEMBER 1981



National Aeronautics and
Space Administration

Goddard Space Flight Center
Greenbelt, Maryland 20771

REPORTS ON CRUSTAL MOVEMENTS AND DEFORMATIONS

Steven C. Cohen
Geodynamics Branch
Goddard Space Flight Center
Greenbelt, Maryland 20771

Tim Peck
Department of Geology
University of Maryland
College Park, Maryland 20742

December 1981

GODDARD SPACE FLIGHT CENTER
Greenbelt, Maryland

REPORTS ON CRUSTAL MOVEMENTS AND DEFORMATIONS

PREFACE

This publication, Reports on Crustal Movements and Deformations (ROCMAD), is a catalog of scientific papers on the movements of the Earth's crust. The authors have collected and summarized by various subjects papers containing data on the movement of the Earth's surface due to tectonic processes. We include studies of tectonic plate motions, regional crustal deformations, strain accumulation and release, deformations associated with earthquakes and fault motion, and micro-plate motion. To a limited extent we have also included papers dealing with global models of current plate motions and a few papers on crustal stress. Conversely we have excluded papers which are primarily theoretical analyses and papers which discuss tectonic and geologic history but do not present rates of movements or deformations.

Our data base is restricted to articles appearing in reviewed technical journals during the years 1970-1980. The major journals we have searched include: Journal of Geophysical Research (solid earth), Tectonophysics, Bulletin of the Seismological Society of America, Geological Society of America Bulletin, Geophysical Journal of the Royal Astronomical Society, and the Journal of Geology. We have also collected papers from Science, Nature, Earth and Planetary Science Letters, Philosophical Transactions of the Royal Society of London, plus several other journals.

We wish to emphasize the preliminary nature of this report. The present catalog contains well over 300 entries but our literature search is not yet exhaustive. As mentioned, a number of relevant journals have not yet been systematically examined for relevant articles and we recognize that we have overlooked some appropriate articles in the journals we have examined. It is our intension to expand and update this catalog provided we find our scientific colleagues are interested in this information. In this regard the authors welcome comments, suggestions, criticisms, on the report, its format, and plans for future expansion. Particularly welcome are citations for papers to be included in subsequent printing of the catalog. Comments can be addressed to Dr. Steven Cohen, Code 921, Goddard Space Flight Center, Greenbelt, MD. 20771; phone calls can be made to 301-344-7641.

FORMAT OF CATALOG

Papers are grouped by the month and year of publication.* Each month's summary page(s) contains two sections. The upper section provides a literature citation to each article including the title, authors' names, journal name, volume, and page numbers. Journal abbreviations are listed at the end of this section on catalog format. The papers are also indexed by a number which is used to identify the paper on the lower section of the page. In this latter section the articles are cataloged by three topics: the region of the Earth studied (e.g. North America, Indonesia), the type of movement or deformation considered (e.g. plate motion, strain), and the class of measurement technique (e.g. geodetic, geologic). A typical entry is item 1 for February, 1970. In the upper section of the appropriate ROCMAD page can be found the paper's title: "Magnetic and Bathymetric Data Bearing on Sea Floor Spreading North of Iceland," the authors' names: P. R. Vogt, N. A. Ostenso, and G. L. Johnson, and the journal citation: Journal of Geophysical Research, volume 75, pages 903-920. On the bottom section of the page, the summary indicates that this paper deals with sea-floor spreading measured using magnetic anomaly data obtained near Iceland.

We have limited the number of reference topics on the bottom of the page to a number that conveniently fits on a standard sized page. With this limitation it is necessary to adopt a mixed classification scheme, particularly with respect to the regional classification; our regions are a mixture of geographic and tectonic areas as follows:

San Andreas — the San Andreas Fault and related faults in western California

California — the State of California excluding the San Andreas Fault region

Alaska — includes Alaska and the Aleutian Island region

U.S. — the 47 contiguous states of the United States excluding California

North America — both the continent and the tectonic plate; may include Central America

Caribbean — the sea and the tectonic plate

Cocos — the tectonic plate

*In a few cases, it was not possible to identify the month of publication; in that case the article is listed with the January citations of the appropriate year.

Nazca – the tectonic plate

South America – the continent and the tectonic plate

Pacific – both the ocean (overlaps the Cocos and Nazca regions) and the tectonic plate

Japan/Kuril – the region around Japan and the Kuril Islands

Philippines – both the land area and the sea

Indonesia

S.W. Pacific – area including Melanesia, Coral Sea and the Tonga-Kermadec Trench regions

New Zealand

Australia

U.S.S.R.

China

India – the country and tectonic plate

Indian Ocean – the ocean and tectonic plate

Asia

Mid-East

Africa – the continent and tectonic plate

Mediterranean/Southern Europe – Mediterranean Sea area, Italy, Greece

Northern Europe – includes most of Europe, the British Isles and Ireland, and Scandanavia

Eurasia – the continent and tectonic plate

Atlantic

Iceland

Antarctica – the continent and tectonic plate

The classification of movement and deformation type includes:

spreading – sea floor and continental spreading

convergence

slip rate – relative motion across a fault or group of faults

plate motion – include rotation rates and rotation poles as well as absolute and relative plate velocities

strain – either strain, strain rate, or line length changes

tilt/uplift – tilt, uplift, or subsidence

earthquake – preseismic, coseismic, or postseismic crustal displacement, displacement rates or deformation (non-oscillatory)

creep – fault creep

The measurement classification scheme includes the following entries:

geodetic – trilateration, triangulation and leveling surveys; strainmeter, creepmeter, and tilt-meter measurements; geodimeter and satellite geodesy measurements; tide gauge data

geologic – field and remote sensing investigations, mapping and topography studies, radiometric dating, stratigraphic investigations

magnetic – usually magnetic anomaly studies often coupled with bathymetry measurements

seismic – fault plane solutions, seismic wave interpretations, seismicity records, seismic slip estimates and recurrence rates, reflection and refraction profiles

paleomagnetic

In a few cases the main thrust of a paper is not well covered by our classification scheme so additional descriptors are used, as Labrador Sea for paper 1 of July 1971.

Journal Abbreviations

JGR – Journal of Geophysical Research (solid earth)

BSSA – Bulletin of the Seismological Society of America

GSA – Geological Society of America Bulletin

Geophys. J. R. Astr. Soc. – Geophysical Journal of the Royal Astronomical Society

Phil. Trans. Roy. Soc. Lond. – Philosophical Transactions of the Royal Society of London

Earth Planet. Sci. Let. – Earth and Planetary Science Letters

J. Geol. Soc. Lond. – Journal of the Geological Society of London

Rev. Geophys. Space Physics – Reviews of Geophysics and Space Physics

Amer. Assoc. Pet. Geol. – The American Association of Petroleum Geologists Bulletin

J. Geomag. Geoelectr. – Journal of Geomagnetism and Geoelectricity

ORIGINAL PAGE 13
OF POOR QUALITY

ACJWONKOUZWT-U

SW-SZ-U

240ZWT-U

050109-U

050001-U

URWWA

WARTIDJAYE

T-JT/DAJ-ET

WREK-N

ALATE NOT-OZ

SJ-A RATE

COZYERGENZE

WREAD-NG

KZT-ARUT-UA

-UWJ'ND

ATJAZT-U

WJRS-A

Z WJROBE

WED-T/S EDR

KLR-UA

W-D EAST

KS-A

-ZD-AZ OUEAZ

-ZD-A

UI-NA

USSE

KJST-KAJ-A

ZWZ NEWLAND

SW PAC-U

-ZOOZES-A

RI-J-AP-ZES

WAPAZ/KJR-J

PAC-U

SOUTH AMER-UA

ZANUA

COUOS

UAC-GBEAZ

NORTH AMER-UA

DS

KJESKA

UJ-40RZ-A

SEZ ANDREAS

JANUARY, 1970

On Variations of Recent Crustal Movement Velocities on Garm and Nimichi Polygons – Yu D. Boulanger, A. K. Pevnev, V. B. Enman, Tectonophysics, 9, 103-112.

Some Characteristic Features of the Anatolian Fault Zone — N. N. Ambraseys, *Tectonophysics*, 9, 143-165.

ORIGINAL PAGE IS
OF POOR QUALITY

[illegible]

[illegible]

1 Earthquake Mechanisms in the Himalayan, Burmese, and Andaman Regions and Continental Tectonics in Central Asia - T. J. Fitch, JGR, 75, 2699-2709.

ORIGINAL PAGE IS
OF POOR QUALITY

RAJESONAGNETIC	
SEISMIC	X
MAGNETIC	
GEOLOGIC	
GEODETTIC	
URGER	
EARTHQUAKE	
TILITY/UPLIFT	
STRAIN	
PLATE MOTION	
SLIP RATE	X
CONVERGENCE	
SPREADING	
ANTARCTICA	
ICELAND	
ATLANTIC	
EURASIA	X
N EUROPE	
MEDIT/S EUR	
AFRICA	
MID EAST	
ASIA	
INDIAN OCEAN	
INDIA	X
CHINA	
USSR	
AUSTRALIA	
NEW ZEALAND	
SW PACIFIC	
INDONESIA	
PHILIPPINES	
JAPAN/KURIL	
PACIFIC	
SOUTH AMERICA	
NAZCA	
COCOS	
CARIBBEAN	
NORTH AMERICA	
US	
ALASKA	
CALIFORNIA	
SAN ANDREAS	

MAY, 1970

Seismic Slip Rate Versus Sea-Floor Spreading Rate on the Eastern Pacific Rise and Pacific Antarctic Ridge - J. Northrop, M. F. Northrop, F. Duennebieber, JGR., 75, 3285-3290 (See comment and reply June, 1971).

JUNE, 1970

ORIGINAL PAGE IS
OF POOR QUALITY

REJFOMAGNET-U

SE-SM-U

MAGNETIC

GEOLOGIC

GEODEY-U

GENERAL

EARTHQUAKE

TILT/DIP/SLIP

STRAIN

PLATE MOTION

SLIP RATE

CONVERGENCE

SPREADING

ANTARCTICA

ICELAND

ATLANTIC

EURASIA

N EUROPE

MEDIT/S EUR

AFRICA

MID EAST

ASIA

INDIAN OCEAN

INDIA

CHINA

USSR

AUSTRALIA

NEW ZEALAND

SW PACIFIC

INDONESIA

PHILIPPINES

JAPAN/KURIL

PACIFIC

SOUTH AMERICA

CHINA

COCOS

CARIBBEAN

NORTH AMERICA

US

ALASKA

CALIFORNIA

SAN ANDREAS

JULY, 1970

[illegible]

1 Bocono Fault, Venezuela, Andes: Evidence of Postglacial Movement - C. Schubert, R. S. Sifortes, Science, 170, 66-69.

PALEOMAGNETIC

SEISMIC

MAGNETIC

GEOLOGIC

GEODETTIC

X

CRATER

EARTHQUAKE

TILT/UPLIFT

STRAIN

PLATE MOTION

SLIP RATE

X

CONVERGENCE

SPREADING

ANTARCTICA

ICELAND

ATLANTIC

EURASIA

N EUROPE

MEDIT/S EUR

AFRICA

MID EAST

ASIA

INDIAN OCEAN

INDIA

CHINA

USSR

AUSTRALIA

NEW ZEALAND

SW PACIFIC

INDONESIA

PHILIPPINES

JAPAN/KURIL

PACIFIC

SOUTH AMERICA

X

NAZCA

COCOS

CARIBBEAN

X

NORTH AMERICA

US

ALASKA

CALIFORNIA

SAN ANDREAS

1

OCTOBER, 1970

[illegible]

[illegible]

FEBRUARY, 1971

1 Geophysical Study of the Opening of the Labrador Sea - X. LePichon, R. D. Hyndman, G. Pautot, JGR, 76, 4724-4743 (see comments September 1972)

SEISMIC
 MAGNETIC
 GEOLOGIC
 GEODETIC
 UREWA
 EARTHQUAKE
 TILT/UPLIFT
 STRAIN
 PLATE MOTION
 SLIP RATE
 CONVERGENCE
 SUBSIDING
 ANTARCTICA
 ICELAND
 ATLANTIC
 EURASIA
 N EUROPE
 MEDIT/S EUR
 AFRICA
 MID EAST
 ASIA
 INDIAN OCEAN
 INDIA
 CHINA
 USSR
 AUSTRALIA
 NEW ZEALAND
 SW PACIFIC
 INDONESIA
 PHILIPPINES
 JAPAN/KURIL
 PACIFIC
 SOUTH AMERICA
 NANCA
 COCOS
 CARIBBEAN
 NORTH AMERICA
 US
 ALASKA
 CALIFORNIA
 SAN ANDREAS

LABRADOR SEA

JULY, 1971

[illegible]

AUGUST, 1971

[illegible]

PALEOMAGNETIC

SEISMIC

MAGNETIC

GEOLOGIC

GEOPHYSIC

URENA

EARTHQUAKE

TILT/SUBSIDENCE

STRAIN

PLATE MOTION

SLIP RATE

CONVERGENCE

SPREADING

ANTARCTICA

GREENLAND

ATLANTIC

EURASIA

N. EUROPE

MEDITERRANEAN

AFRICA

MIDDLE EAST

ASIA

INDIAN OCEAN

INDIA

CHINA

USSR

AUSTRALIA

NEW ZEALAND

S. PACIFIC

INDONESIA

PHILIPPINES

JAPAN/KOREA

PACIFIC

SOUTH AMERICA

AFRICA

EUROPE

CARIBBEAN

NORTH AMERICA

US

ALASKA

CALIFORNIA

ST. ANDREAS

APRIL, 1972

1

[illegible]

[illegible]

[illegible]

[illegible]

A Topographic Interpretation of the Mathematician Ridge, Clipperton Ridge, East Pacific Rise System - R. N. Anderson, E. E. Davis, Nature, 241, 191-193.

Plate Motions and Deep Mantle Convection — W. J. Morgan, Studies in Earth and Space Science, Geological Society of America, Memoir 132, 7-22.

		TOPOGRAPHY			
	PALAEOMAGNETIC				
	SEISMIC				
	MAGNETIC				
	GEOLOGIC				
	GEODETTIC				
	ORFEEA				
	EARTHQUAKE				
	TILT/SUBLIFT				
	STRAIN				
	PLATE MOTION				
	SLIP RATE				
	CONVERGENCE				
	SPREADING	X			
	ANTARCTICA				
	ICELAND				
	ATLANTIC				
	EURASIA				
	N EUROPE				
	MEDIT/S EUR				
	AFRICA				
	MID EAST				
	ASIA				
	INDIAN OCEAN				
	INDIA				
	CHINA				
	USSR				
	AUSTRALIA				
	NEW ZEALAND				
	SW PACIFIC				
	INDONESIA				
	PHILIPPINES				
	JAPAN/KURIL				
	PACIFIC	X			
	SOUTH AMERICA				
	NANUA				
	COCOS	X			
	CARIBBEAN				
	NORTH AMERICA				
	US				
	ALASKA				
	CALIFORNIA				
	SAN ANDREAS				
1					
2					

[illegible]

[illegible]

[illegible]

1

1

1 Detailed Magnetic Survey in the Northeast Atlantic and Labrador Sea -- P. R. Vogt and A. E. Avery, JGR, 79, 363-389.

PALEOMAGNETIC
SEISMIC
MAGNETIC
GEOLOGIC
GEODETIC

X

CRUST
EARTHQUAKE
TILT/UPLIFT
STRAIN
PLATE MOTION
SLIP RATE
CONVERGENCE
SPREADING

X

ANTARCTICA
ICELAND
ATLANTIC
EURASIA
N EUROPE
MEDIT/S EUR
AFRICA
MID EAST

X

ASIA
INDIAN OCEAN
INDIA
CHINA
USSR
AUSTRALIA
NW ZEALAND
SW PACIFIC
INDONESIA
PHILIPPINES
JAPAN/KURIL
PACIFIC

SOUTH AMERICA
NORCA
COCOS
CARIBBEAN
NORTH AMERICA

US
ALASKA
CALIFORNIA
SAN ANDREAS

1

JANUARY, 1974

	PALaeOMAGNETIC
	SE-SM-C
	MAGNETIC
	GEOLOGIC
	GEODETI-C
	CREEP
	EARTHQUAKE
	TILT/UPLIFT
	STRAIN
	PLATE MOTION
	SLIP RATE
	CONVERGENCE
	SPREADING
	ANTARCTICA
	-CELAND
	ATLANTIC
	EURASIA
	N EUROPE
	MED-T/S EUR
	AFRICA
	MID EAST
	ASIA
	-INDIAN OCEAN
	-INDIA
	CHINA
	USSR
	AUSTRALIA
	NEW ZEALAND
	SW PACIFIC
	-INDONESIA
	PHILIPPINES
	JAPAN/KURIL
	PACIFIC
	SOUTH AMERICA
	NANUA
	COCOS
	CARIBBEAN
	NORTH AMERICA
	US
	ALASKA
	CALIFORNIA
	SAN ANDREAS

1 Plate Tectonics and the Japanese Islands: A Synthesis - S. Uyeda, A. Miyashiro, GSA, 85, 1159-1170.

PALEOMAGNETIC
SEISMIC
MAGNETIC
GEOLOGIC
GEODETTIC
CREEP
EARTHQUAKE
TILT/UPLIFT
STRAIN
PLATE MOTION
SLIP RATE
CONVERGENCE
SPREADING
ANTARCTICA
ICELAND
ATLANTIC
EURASIA
N EUROPE
MEDIT/S EUR
AFRICA
MID EAST
ASIA
INDIAN OCEAN
INDIA
CHINA
USSR
AUSTRALIA
NEW ZEALAND
SW PACIFIC
INDONESIA
PHILIPPINES
JAPAN/KURIL
PACIFIC
SOUTH AMERICA
ZANCA
COCOS
CARIBBEAN
NORTH AMERICA
US
ALASKA
CALIFORNIA
SAN ANDREAS

1

JULY, 1974

1 Crustal Strain Measurements in Nevada - K. Priestley, BSSA, 64, 1319-1328.

PALEOMAGNETIC
SEISMIC
MAGNETIC
GEOLOGIC
GEODETTIC X
CREEP
EARTHQUAKE
TILT/UPLIFT
STRAIN X
PLATE MOTION
SLIP RATE
CONVERGENCE
SPREADING
ANTARCTICA
ICELAND
ATLANTIC
EURASIA
NEUROPE
MEDIT/S EUR
AFRICA
MID EAST
ASIA
INDIAN OCEAN
INDIA
CHINA
USSR
AUSTRALIA
NEW ZEALAND
SW PACIFIC
INDONESIA
PHILIPPINES
JAPAN/KURIL
PACIFIC
SOUTH AMERICA
NANCA
COLOS
CARIBBEAN
NORTH AMERICA
US X
ALASKA
CALIFORNIA
SAN ANDREAS

1

AUGUST, 1974

Offset Plutons and History of Movement Along the McKinley Segment of the Denali Fault System, Alaska — B. L. Reed, M. A. Lanphere, GSA, 85, 1883-1892.

[illegible]

[illegible]

[illegible]

JULY, 1975

[illegible]

1

1

1 Changes in the Axial Configuration of the East Pacific Rise Near 6°S During the Past 2 M.Y. - D. K. Rea, JGR, 81, 1495-1504.

PALEOMAGNETIC
SEISMIC
MAGNETIC
GEOLOGIC
GEODETTIC
CREEP
EARTHQUAKE
TILTY/DIPSLIP
STRAIN
PLATE MOTION
SLIP RATE
CONVERGENCE
SPREADING
ANTARCTICA
ICELAND
ATLANTIC
EURASIA
N EUROPE
MEDITERRANEAN
AFRICA
MID EAST
ASIA
INDIAN OCEAN
INDIA
CHINA
USSR
AUSTRALIA
NEW ZEALAND
SW PACIFIC
INDONESIA
PHILIPPINES
JAPAN/KURIL
PACIFIC
SOUTH AMERICA
NAZCA
COCOS
CARIBBEAN
NORTH AMERICA
US
ALASKA
CALIFORNIA
SAN ANDREAS

X

X

X

X

MARCH, 1976

[illegible]

1 Tectonic Fabric and Hydrothermal Activity of Mid-Atlantic Ridge Crest (lat. 26°N) — P. A. Rona, R. N. Harbison, B. G. Bassinger, R. B. Scott, A. J. Nalwalk, GSA, 87, 661-674.

PALEOMAGNETIC
SEISMIC
MAGNETIC
GEOLOGIC
GEODETIC

CREEP
EARTHQUAKE
TILT/UPLIFT
STRAIN
PLATE MOTION
SLIP RATE
CONVERGENCE
SPREADING

ANTARCTICA
ICELAND
ATLANTIC

EURASIA
N EUROPE
MEDIT/S EUR
AFRICA
MID EAST
ASIA
INDIAN OCEAN

INDIA
CHINA
USSR
AUSTRALIA
NEW ZEALAND
SW PACIFIC
INDONESIA
PHILIPPINES
JAPAN/KURIL
PACIFIC

SOUTH AMERICA
NANCA
COCOS
CARIBBEAN
NORTH AMERICA

US
ALASKA
CALIFORNIA
SAN ANDREAS

MAY, 1976

[illegible]

[illegible]

1 Short Period Nonseismic Tilt Perturbations and Their Relation to Episodic Slip on the San Andreas Fault in Central California - S. McHugh,
M. J. S. Johnston, JGR, 81, 6341-6346.

PALEOMAGNETIC
SEISMIC
MAGNETIC
GEOLOGIC
GEODETTIC
Y
ORRER
EARTHQUAKE
TILT/PLIFT
XX
STRAIN
XX
PLATE MOTION
SLIP RATE
CONVERGENCE
SPREADING
ANTARCTICA
-GELAND
ATLANTIC
EURASIA
N EUROPE
MEDIT/S EUR
AFRICA
MID EAST
ASIA
-INDIAN OCEAN
-INDIA
CHINA
USSR
AUSTRALIA
NEW ZEALAND
SW PACIFIC
-INDONESIA
PHILIPPINES
JAPAN/KURIL
PACIFIC
SOUTH AMERICA
VANUA
COCOS
CARIBBEAN
NORTH AMERICA
US
ALASKA
CALIFORNIA
SAN ANDREAS
IX

[illegible]

[illegible]

1 Late Quaternary Tectonic Movements and Sea Level Changes at Timor and Atauro Island - J. Chappell, H. H. Veeh, GSA, 89, 356-368.

PALEOMAGNETIC
 SEISMIC
 MAGNETIC
 GEOLOGIC
 GEODETIC
 CREEP
 EARTHQUAKE
 TILT/UPLIFT
 STRAIN
 PLATE MOTION
 SLIP RATE
 CONVERGENCE
 SPREADING
 ANTARCTICA
 ICELAND
 ATLANTIC
 EURASIA
 N EUROPE
 MEDIT/S EUR
 AFRICA
 MID EAST
 ASIA
 INDIAN OCEAN
 INDIA
 CHINA
 USSR
 AUSTRALIA
 NEW ZEALAND
 SW PACIFIC
 INDONESIA
 PHILIPPINES
 JAPAN/KURIL
 PACIFIC
 SOUTH AMERICA
 NAZCA
 COCOS
 CARIBBEAN
 NORTH AMERICA
 US
 ALASKA
 CALIFORNIA
 SAN ANDREAS

X CORAL

X

X

1

MARCH, 1978

1 Asymmetric Sea-Floor Spreading and a Nontransform Axis Offset: The East Pacific Rise 20° S Survey Area - D. K. Rea, GSA, 89, 836-844.

PALEOMAGNETIC
 SEISMIC
 MAGNETIC X
 GEOLOGIC
 GEODETIC
 CREEP
 EARTHQUAKE
 TILTY/UPLIFT
 STRAIN
 PLATE MOTION
 SLIP RATE
 CONVERGENCE
 SPREADING X
 ANTARCTICA
 ICELAND
 ATLANTIC
 EURASIA
 N EUROPE
 MEDIT/S EUR
 AFRICA
 MID EAST
 ASIA
 INDIAN OCEAN
 INDIA
 CHINA
 USSR
 AUSTRALIA
 NEW ZEALAND
 SW PACIFIC
 INDONESIA
 PHILIPPINES
 JAPAN/KURIL
 PACIFIC X
 SOUTH AMERICA
 NAZCA X
 COCOS
 CARIBBEAN
 NORTH AMERICA
 US
 ALASKA
 CALIFORNIA
 SAN ANDREAS

1

JUNE, 1978

[illegible]

JANUARY, 1979

11	A Comparison of Long-Baseline Strain Data and Fault Creep Records Obtained Near Hollister, California – L. E. Slater, R. O. Burford, Tectonophysics, 52, 481-496.																																																			
12	Mekometer Measurements in the Imperial Valley, California – R. C. Mason, J. L. Brander, M. G. Bill, Tectonophysics, 52, 447-450.																																																			
13	The Interpretation of Vertical Crust Movements in the Time-Space Domain – T. Kato, Tectonophysics, 52, 305-316.																																																			
14	Interim Report 1975-1976 of the Fennoscandian Subcommittee of the Commission on Recent Crustal Movements -- A. A. Nikonov, Tectonophysics, 52, 5-14.																																																			
15	Early 20th Century Uplift of the Northern Peninsular Ranges Province of Southern California – S. H. Wood, M. R. Elliott, Tectonophysics, 52, 249-265.																																																			
16	Recent Crustal Movements in the Sierra Nevada-Walker Lane Region of California-Nevada: Part I, Rate and Style of Deformation – D. B. Slemmons, D. Van 't Ormer, E. J. Bell, M. L. Silberman, Tectonophysics 52, 561-570.																																																			
17	Estimating the Seismicity from Geological Structure for Seismic Risk Studies – J. G. Anderson, BSSA, 69, 135-158.																																																			
18	Strain Measurements and Tectonics of New Zealand – R. I. Walcott, Tectonophysics, 52, 479.																																																			
19	Changes in Rate of Fault Creep – P. W. Harsh, Tectonophysics, 52, 519.																																																			
20	Initiation and Development of the Southern California Uplift along Its Northern Margin – R. S. Stein, W. Thatcher, R. O. Castle, Tectonophysics, 52, 301-302.																																																			
	SAN ANDREAS	CALIFORNIA	ALASKA	US	NORTH AMERICA	CARIBBEAN	COCOS	NAZCA	SOUTH AMERICA	PACIFIC	JAPAN/KURIL	PHILIPPINES	INDONESIA	SW PACIFIC	NEW ZEALAND	AUSTRALIA	USSR	CHINA	INDIA	INDIAN OCEAN	ASIA	MID EAST	AFRICA	MEDIT/S EUR	EUROPE	EURASIA	ATLANTIC	ICELAND	ANTARCTICA	SPREADING	CONVERGENCE	SLIP RATE	PLATE MOTION	STRAIN	TILT/UPLIFT	EARTHQUAKE	CREEP		GEODETIC	GEOLOGIC	MAGNETIC	SEISMIC	PALEOMAGNETIC									
11	X																																																			
12		X																																																		
13											X																																									
14																	X																																			
15		X																																																		
16		X																																																		
17	X	X																																																		
18															X																																					
19	X																																																			
20	X																																																			

21 Holocene Deformation and Crustal Movements in Some Type Areas of India - L. N. Kailasam, Tectonophysics, 52, 211-222.

PALEOMAGNETIC
SEISMIC
MAGNETIC
GEOLOGIC
GEODETIC
X
CREEP
EARTHQUAKE
TILT/UPLIFT
X
STRAIN
PLATE MOTION
SLIP RATE
CONVERGENCE
SPREADING
ANTARCTICA
ICELAND
ATLANTIC
EURASIA
N EUROPE
MEDIT/S EUR
AFRICA
MID EAST
ASIA
INDIAN OCEAN
INDIA
X
CHINA
USSR
AUSTRALIA
NEW ZEALAND
SW PACIFIC
INDONESIA
PHILIPPINES
JAPAN/KURIL
PACIFIC
SOUTH AMERICA
NANCA
COGOS
CARIBBEAN
NORTH AMERICA
US
ALASKA
CALIFORNIA
SAN ANDREAS

21

[illegible]

MARCH, 1979

[illegible]

[illegible]

Paleomagnetic Poles and Polarity Zonation from the Middle Proterozoic Belt Supergroup, Montana and Idaho — D. P. Elston, S. L. Bressler, JGR, 85, 339-355.

[illegible]

Tectonic Significance of the Young Mineral Dates and the Rates of Cooling and Uplift in the Himalaya – P. K. Mehta, Tectonophysics, 62, 205-217.

	PALAEOMAGNETIC	
	SEISMIC	
	MAGNETIC	
	GEOLOGIC	X
	GEODETTIC	
	CREEP	
	EARTHQUAKE	
	TILT/UPLIFT	X
	STRAIN	
	PLATE MOTION	
	SLIP RATE	
	CONVERGENCE	
	SPREADING	
	ANTARCTICA	
	ICELAND	
	ATLANTIC	
	EURASIA	
	N EUROPE	
	MED-T/S EUR	
	AFRICA	
	MID EAST	
	ASIA	
	INDIAN OCEAN	
	INDIA	X
	CHINA	
	USSR	
	AUSTRALIA	
	NEW ZEALAND	
	SW PACIFIC	
	INDONESIA	
	PHILIPPINES	
	KAZAKHURJ	
	PACIFIC	
	SOUTH AMERICA	
	ZENUC	
	GUOS	
	CARIBBEAN	
	NORTH AMERICA	
	US	
	ALASKA	
	CALIFORNIA	
	SAN ANDREAS	
		1

1 Geodetically Derived Strain At Shelter Cover, California - R. A. Snay, M. W. Cline, BSSA, 70, 893-901.

PALEOMAGNETIC
 SEISMIC
 MAGNETIC
 GEOLOGIC
 GEODETIC X
 CREEP
 EARTHQUAKE
 TILT/UPLIFT
 STRAIN X
 PLATE MOTION
 SLIP RATE
 CONVERGENCE
 SPREADING
 ANTARCTICA
 ICELAND
 ATLANTIC
 EURASIA
 N EUROPE
 MEDIT/S EUR
 AFRICA
 MIDDLE EAST
 ASIA
 INDIAN OCEAN
 INDIA
 CHINA
 USSR
 AUSTRALIA
 NEW ZEALAND
 SW PACIFIC
 INDONESIA
 PHILIPPINES
 JAPAN/KURIL
 PACIFIC
 SOUTH AMERICA
 AFRICA
 EQUATOR
 CARIBBEAN
 NORTH AMERICA
 US
 ALASKA
 CALIFORNIA
 SAN ANDREAS IX

JUNE, 1980

[illegible]

